

ABSTRACT

Bipolar plates and end plates for fuel cell stacks. The bipolar plates or end plates may include semi-conductive or conductive bodies, intricate features with close tolerances such as narrow flow channels and conduits with complex flow paths, integral resistive heating elements, internal catalytic reforming capability, integral heat exchanging structure, substantially flat and undistorted contact faces, integral sensors, and internal recuperative heat exchanging capacity.

Methods of making bipolar plates and end plates for fuel cell stacks. The methods involve a range of integrated processing techniques that enable a flexible approach to bipolar and end plate design. In addition, the ability to reliably produce features on a small scale allows for the potential miniaturization of bipolar plates and end plates and is therefore ideally suited to further the development of small scale portable fuel cell systems.

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